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It is well to notice that the shape of the sterile filament in *Scrophularia* is not now considered to be a test in determining species. I sent to Dr. Gray, specimens of *S. Californica* in which the filaments varied much. I have this plant from Colorado also.

*Pentstemon Eatoni*, Gray, has the corolla also  $1\frac{1}{2}$ " long, pedicels 4"-6" long; sepals half as long; peduncles sometimes 6" long, 5 to 8-flowered; pods ovate, acuminate, 6" long by 4" broad. It is three feet high, with spikes 18 inches long in my Frisco specimens.

*Pentstemon azureus*, Benth., var. *Jaffrayanus*, Gray, is often not at all glaucous.

*Scutellaria antirrhinoides* is not uncommon at Ogden. I believe it has not been reported east of Nevada before.

*Echinopspermum subdecumbens*, Parry. Dr. Parry called my attention to this plant, which Gray refers to *E. floribundum*. At first it appears to be very distinct, meriting a specific rank, both on account of the nutlets and its perennial root. But higher in the canyons it is more frequently biennial, and has both smooth and prickly-faced nutlets, and certainly unites *E. floribundum* and *E. deflexum* as Watson decided in King's Report.

*Eritrichium circumscissum*, Gray, is abundant at St. George. It has a strong purple coloring-matter. There are several species of *Eritrichium* occurring at St. George that have so strong a purple dye as to color through the papers in which they are dried.

*Atriplex confertifolia*, Watson, has an oil which the Mormons use for the hair. The plant goes by the name of "white sage."

*Juniperus Californica*, Carr., var. *Utahensis*, Eng., Watson reports (as *J. occidentalis*) from Nevada in King's Report, and appends the remark that he did not meet with it in Utah! This must be a mistake, for on Antelope Island, where much of his Utah botanizing was done, there is a belt of this plant extending nearly from one end of the Island to the other on both sides. In company with Dr. Englemann, I found it at Ogden, and have since found it at the mouth of Parley's Canyon, near Salt Lake City, and at the foot of Bear Lake, in the extreme north-eastern corner of the Territory.

*Calochortus flexuosus*, Watson, is a most lovely plant.

*Polypogon Monspeliensis* occurs as far south as St. George, and appears to be an introduced plant.

I have discovered in the canyons of the Wasatch, *Salix lesiandra*, var. *Fendleriana*, *S. flavescens* and *S. rostrata*.

*Eriocoma cuspidata* is the prevalent grass of the desert region of Western Utah, and is highly valued as a forage plant by the freighters.

I have *Stipa speciosa*, Trin. & Rup., from St. George and Frisco.

A plant found in City Creek Canyon Dr. Vasey thinks is a new variety of *Festuca pauciflora*, but lack of ripe fruit makes it somewhat uncertain.

Salt Lake City, Utah.

MARCUS E. JONES.

§ 70. **Stamens within the Ovary of Salix.**—The frequency of abnormal development in the floral organs of our *Salices* this season, seems quite remarkable. Within an area of less than a mile I have

noticed perhaps a dozen individuals exhibiting various phases of abnormal growth. The tendency towards transformation of stamens into pistils, and *vice versa*, has been frequent, and I have also noticed the surprising phenomenon of anthers developed within the closed ovary! Briefly stated, the course of this development so far as I was able to trace it, by an examination of various ovaries in different stages, borne on the same catkin, was as follows: On the upper portion of the inner walls of the ovary, just above the ovules, a pair of slender parallel folds appear in the tissue on either side, gradually increasing in size until one of them has developed into a perfect poliniferous anther-lobe. Up to this point the ovary remains otherwise unchanged (except in the obsolescence of the silky hairs of its outer surface) and a lateral section shows the ovules occupying the lower part, on basal, or partially parietal placentae—some of them being actually contiguous with the yellow, often red-tinged, anther-lobes above. At about this stage the ovary begins to separate between the styles, and an orifice is formed which reveals the anthers within. The latter, as the separating process continues, are brought out on the diverging portions of the ovary, which, undergoing gradual atrophy, finally becomes a hyaline filament bearing two perfect anthers at its apex. In some cases, the anthers were separated by a partial division of the filament—a direct effort towards the normal diandrous state.

In many instances the affected parts were found to be shrivelled after having undergone a partial change, and developing ovaries were found still containing a remnant of the anther.

In another case the ovaries were borne on slender drooping pedicels, thus showing some relationship to stamens; and, though these had not split, most of the catkins bearing them were partially divided through the axis. In this specimen, at the expense of the ovules, their usual downy coverings had been greatly developed, often extruding as a dense cottony mass through a rupture in the walls of the receptacle.

Still another abnormal condition of the floral organs was noticed in the complete gradation, in several shrubs, between a single ovary and two diverging ones borne on the same pedicel.

The affected species were mostly *Salix discolor*, Muhl., with one or two plants of *S. cordata*, Muhl.

Riverdale, New York.

E. P. BICKNELL.

§ 71. **Notes on a Few of our Carices.**—It seems to me that Prof. Gray was not at all out of the way, when, in his Gramineae and Cyperaceae, he classed *Carex varia*, Muhl., as a variety of *C. Pennsylvanica*, Lam. Unlike as these two plants appear to be when answering to their respective descriptions, yet, when compared with their several variable forms, their differential points wholly fail and separation becomes guess-work. Among my specimens of *C. Pennsylvanica* there are several with spikelets quite as distinct as are those of the typical *C. varia*, while others have light-brown scales and obovoid perigynia. On the other hand, *C. varia* has its spikelets sometimes approximate, its perigynia roundish, and its leaves very long and slender. It is hoped that competent observers will examine these variant forms and record their conclusions.